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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/593,224

09/18/2006

Jens Wolber

3833

9934

278

7590

03/30/2009

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EXAMINER

MCCALL, ERIC SCOTT

ART UNIT

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2855

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/593,224	<b>Applicant(s)</b> WOLBER ET AL.	
	<b>Examiner</b> Eric S. McCall	<b>Art Unit</b> 2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 December 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4,7 and 8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4,7 and 8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**METHOD AND DEVICE FOR**  
**MONITORING A FUEL INJECTION DEVICE FOR**  
**AN INTERNAL COMBUSTION ENGINE**

**FINAL OFFICE ACTION**

This action is in response to the Applicant's amendment dated Dec.10, 2008.

**ABSTRACT**

In view of the Applicant's amendments, the objection to the abstract as set forth in the previous office action of Sep. 15, 2008 has been overcome.

**CLAIMS**

35 U.S.C. § 112

*(First Paragraph)*

Claims 1-4, 7, and 8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Amended independent claims 1 and 7 set forth the limitation of implementing as a response, “a limp-home mode”. However, the specification does not describe a “limp-home mode” in a way as to enable one to make and/or use a limp home mode.

*(Second Paragraph)*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-4, 7, and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention.

Claim 1, the added limitation of “implementing as a response one of a check for electrical faults of an output stage and a limp-home mode” is indefinite as to (1) what the “output stage” is in reference to and (2) the specific meaning of “limp-home mode” since the specification does not define such a limp-home mode.

Claims 3 and 4, the phrase “the fuel pressure” lacks antecedent basis because claims 3 and 4 both refer to “*the* fuel pressure” but a fuel pressure has not been previously set forth in the claims.

Claim 7, the added limitation of “implements as a response one of a check for electrical faults of an output stage and a limp-home mode” is indefinite as to (1) what the “output stage” is in reference to and (2) the specific meaning of “limp-home mode” since the specification does not define such a limp-home mode.

35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 7, and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Tsujimura et al. (7,243,532).

With respect to independent claims 1 and 7, Tsujimura et al. set forth a method, and corresponding device, for monitoring an injection device for an internal combustion engine, comprising the following steps:

monitoring by a misfire detection of a cylinder of the internal combustion engine for misfiring (Fig. 2);

detecting a mechanical malfunction (which is *at least one of* a mechanical malfunction and an electrical malfunction as claimed) of an injection device by evaluating signals of the misfire detection (ie. comparing actual fuel injection quantity of suspected misfiring cylinder to average fuel injection quantity to all cylinders; see abstract); and

implementing as a response a limp-home mode (111 of Fig. 2; which is *one of* a check for electrical faults of an output stage and a limp-home mode depending on the malfunction that was detected as claimed).

With respect to claim 2, Tsujimura et al. set forth that by evaluating a fuel pressure (24), a check is carried out to determine whether there is a malfunction of the injection device.

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With respect to claim 8, Tsujimura et al. set forth the method of claim 1 being carried out by the ECU (40) of the engine and thus a computer program product with program code that is stored on a machine-readable data storage device as claimed.

35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsujimura et al. (7,243,532).

With respect to claims 3 and 4, Tsujimura et al. set forth a fuel pressure sensor (24) that will continuously measure the fuel pressure and thus indicate a malfunction, mechanical or electrical, when the fuel pressure drops below a threshold value when a misfiring cylinder is detected.

Tsujimura et al. fail to set forth that the mechanical or electrical malfunction is that of a malfunction of the injection device.

However, it would have been obvious to one having ordinary skill in the art armed with said teaching to use the fuel pressure sensor (24) to indicate a mechanical or electrical malfunction in the injection device.

The motivation being that the fuel pressure sensor (24) is located in the fuel rail as are the fuel injectors. Thus, a sensed fuel pressure variation is the direct result of fuel injector operation. Any change in the sensed fuel pressure will be indicative of fuel injector operation.

### **Response to Arguments**

The Applicant's arguments have been considered but have not been found to be persuasive. Specifically, the Applicant has argued that the prior art of Tsujimura et al. does not disclose or suggest that signals of the misfire detection can be used to distinguish between a mechanical malfunction and an electrical malfunction of the injection device itself.

The Examiner disagrees. The Examiner points out that signals from the misfire detection *to distinguish between* a mechanical malfunction and an electrical malfunction of the injection device is not required by either independent claim 1 or 7. These independent claims only require the detection of *either* a mechanical malfunction or an electrical malfunction of the injection device by evaluating the misfire detection signals. Tsujimura et al. clearly set forth such a detection.



The Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). The Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

**CONTACT INFORMATION**

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Eric S. McCall whose telephone number is (571) 272-2183.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Eric S. McCall/  
Primary Examiner  
Art Unit 2855